

REMARKS

Claim 200 has been amended. Claims 124-137, 170-188, and 201 have been canceled in this Paper. Claims 1-123, 138-169, and 189-199 have been previously canceled. Claims 210-212 have been added. No new matter has been introduced. Claims 200 and 202-212 are now pending in this application. Applicant reserves the right to pursue the original claims and other claims in this and other applications. Please reconsider the above-referenced application in light of the foregoing amendment and following remarks.

Claims 200-204, 206, and 209 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yamada et al., U.S. Patent No. 5,223,726 ("Yamada"). This rejection is respectfully traversed.

Applicant respectfully submits that Yamada does not disclose the claimed invention. More specifically, Yamada does not disclose, *inter alia*, "performing a first ion implantation of a second conductivity type . . . at a first ion implantation angle" and "performing a second ion implantation of said second conductivity type . . . at a second implantation angle, wherein said first implantation angle is orthogonal to said second ion implantation angle." This limitation is cited in claim 200 and dependent claims 202-204, 206, and 209. In FIGs. 5(g)-5(h), Yamada teaches that "p conductivity type impurities are ion implanted to the trench hole in the opposite directions *each* perpendicular to the charge transfer direction." (Col. 5, line 67-Col. 6, line 2) (emphasis added). Even if Yamada discloses more than one ion implantation, *each* of Yamada's ion implantations would be conducted in a same perpendicular direction to the charge transfer direction. Claim 200, however, recites "performing a first ion implantation . . . at a first ion implantation angle; performing a second ion implantation . . . at a second ion implantation angle; wherein said first implantation angle is orthogonal to said second ion implantation angle." (emphasis added).

Further, Yamada also teaches in FIGs. 5(i)-5(j) that “n conductivity type impurities are ion injected to the inside of the trench hole in a *rotating slanted manner*.” (Col. 6, lines 6-8) (emphasis added). This differs from the claimed invention. The claimed invention discloses performing a first and second ion implantation of a second conductivity type. The first ion implantation angle is orthogonal to the second ion implantation angle. On the other hand, Yamada teaches that the second conductivity type is injected in a “rotating slanted manner,” and not orthogonal as in the claimed invention. In addition, Yamada does not disclose a first *and* second ion implantation of a second conductivity. Instead, Yamada teaches a first implantation of a first conductivity type (p-type) and a second implantation of a second conductivity type (n-type). As such, claim 200 is allowable over Yamada.

Claims 202-204, 206, and 209 depend from claim 200 and are allowable along with claim 200 for at least the reasons provided above. Accordingly, Applicant respectfully submits that the rejection should be withdrawn and the claims allowed.

Claims 205, 207, and 208 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamada in view of alleged admitted prior art. This rejection is respectfully traversed.

Claims 205, 207, and 208 depend from claim 200 and are allowable along with claim 200 for at least the reasons provided above. For instance, Yamada does not disclose, *inter alia*, the acts of “performing a first ion implantation of a second conductivity type . . . at a first ion implantation angle” and “performing a second ion implantation of said second conductivity type . . . at a second implantation angle, wherein said first implantation angle is orthogonal to said second ion implantation angle,” as recited in claim 200.

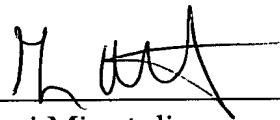
The alleged admitted prior art is relied upon for disclosing that BPSG, PSG, or BSG are well-known materials for passivating a device and CMP is a well-known planarizing method. The alleged admitted prior art adds nothing to rectify the above-noted deficiencies associated with Yamada. As a result, the § 103(a) rejection of claims 205, 207, and 208 should be withdrawn and the claims allowed.

Newly added claims 210-212 depend from claim 200, and should be allowable along with claim 200 for at least the reasons set forth above and on their own merits.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to review and pass this application to issue.

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Respectfully submitted,

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